

No.

200600225



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Montana Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Vida'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-ninth day of September, in the year two thousand and six.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture




U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Montana Agricultural Experiment Station</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <b>MT0245</b>	3. VARIETY NAME <b>Vida</b>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>202 Linfield Hall Montana State University Bozeman, MT 59717</b>		5. TELEPHONE (include area code) <b>(406) 994-3683</b>	FOR OFFICIAL USE ONLY PVPO NUMBER <b>200600225</b>
		6. FAX (include area code) <b>(406) 994-6579</b>	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>State Agricultural Experiment Station</b>	8. IF INCORPORATED, GIVE STATE OF INCORPORATION	9. DATE OF INCORPORATION	FILING DATE <b>MAY 23, 2006</b>
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <b>Luther Talbert Plant Science and Plant Pathology Department Montana State University Bozeman, MT 59717</b>			FILING AND EXAMINATION FEES: \$ <b>4,382.00</b> DATE <b>5/23/06</b> CERTIFICATION FEE: \$ <b>768.00</b> DATE <b>7/24/2006</b>
11. TELEPHONE (Include area code) <b>(406) 994-5060</b>	12. FAX (Include area code) <b>(406) 994-1878</b>	13. E-MAIL <b>usslt@montana.edu</b>	
14. CROP KIND (Common Name) <b>Wheat</b>	16. FAMILY NAME (Botanical) <b>Triticeae</b>	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION	
15. GENUS AND SPECIES NAME OF CROP <b>Triticum aestivum</b>	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 43(a) of the Plant Variety Protection Act) <input checked="" type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input type="checkbox"/> NO (If "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1 2 3 etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, or form, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) <b>Jeff Jacobsen</b>		NAME (Please print or type)	
CAPACITY OR TITLE <b>Dean and Director</b>	DATE <b>5/20/06</b>	CAPACITY OR TITLE	DATE

**Application for Plant Variety Protection Certificate: Vida Wheat****19A. Origin and Breeding History of the Variety**

Vida was derived from an F<sub>4</sub> plant selection from the cross 'Scholar' (PI 607557)/'Reeder' (PI 613586). Scholar is a normal height line with semi-solid stems and good dryland yield potential. Reeder is a semi-dwarf line, and is notable for maintaining green leaf color later in the summer than other wheat lines grown in Montana. Reeder has high yield potential in dryland environments. The breeding procedure for Vida included single seed descent without selection in the F<sub>2</sub> and F<sub>3</sub> generations, followed by subsequent selection for height, heading date, delayed flag leaf senescence, and vigor in space-planted F<sub>4</sub> head rows. F<sub>5</sub> head rows were evaluated for height, heading date, time of flag leaf maturity, uniformity, grain protein, and apparent yield potential. Selected rows were entered into a single row replicated yield trial in Bozeman MT and evaluated for grain yield, grain protein, and dough mixing properties. Superior lines from this nursery, including Vida, were entered into a replicated yield trial planted at four dryland Montana locations as MT 0245 in 2002. The best lines from this nursery were tested alongside currently grown varieties and additional experimental lines in a yield trial conducted at ten Montana locations. In addition, Vida was tested in the Uniform Regional Hard Red Spring Wheat Nursery in 2004 and 2005 under the experimental number MT 0245.

Vida has been observed for three generations of increase and is stable and uniform. Variants that are more than one spike taller than the modal plant height have been observed in some environments at a frequency of 0.01%.

#### 19B. Statement of Distinctness

Comparison of Vida to other varieties grown in Montana is shown in Table 1 (Section 19B). The variety most similar to Vida is Reeder. Based on thirty location/years of testing, Vida differs significantly ( $P < 0.05$ ) from Reeder for grain yield, test weight, heading date, and plant height. These differences are slight and would be difficult to quantify under most field conditions. The most obvious difference between Reeder and Vida is that Vida has semi-solid stems due to the presence of a major gene for stem solidness. On a numerical scale of 5-25, where 5 is hollow and 25 is solid, Vida had an average score over six environments of 11.6 versus a score of 6.3 for Reeder ( $P < 0.01$ ) (Table 2, Section 19B). The varieties Outlook and McNeal are distinguishable from Vida in that they have hollow stems and red chaff color. Hank is distinguishable due to having earlier heading and shorter plant height ( $P < 0.01$  for both traits). Scholar has similar solid stem scores as Vida, but is significantly taller and later to head ( $P < 0.01$  for both traits). Thus, Vida is distinct from other varieties in our area.

The name Vida was checked with the Seed Regulatory and Testing Branch and there were no conflicts with other names.

Mill and bake data is shown in Table 3 (Section 19D). Vida is most similar to Reeder in terms of mill and bake quality.

Table 1.

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## TABLE OF PAIRED T-TEST RESULTS

GRAIN YIELD (BU/AC)

REFERENCE MEAN: MT 0245 66.5 (N= 30)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 10003	THATCHER	48.7	30	-17.8	-10.0	.000
CI 13596	FORTUNA	57.5	30	-9.0	-5.6	.000
PI574642	MCNEAL	60.6	30	-5.9	-4.0	.000
PI592761	ERNEST	57.1	30	-9.4	-7.7	.000
PI607557	SCHOLAR	59.5	30	-6.9	-5.6	.000
ND 695	Reeder	63.3	30	-3.2	-2.5	.020
BZ992588	Conan	59.1	30	-7.3	-5.3	.000
BZ992322	HANK	65.2	30	-1.3	-.9	.362
PI632252	OUTLOOK	64.0	30	-2.4	-1.8	.090
PI633974	CHOTEAU	61.8	30	-4.7	-4.2	.000
AGRIPRO1	NORPRO	63.0	30	-3.4	-2.2	.036
AGRIPRO2	KNUDSON	60.3	30	-6.2	-3.3	.003

TEST WEIGHT (LB/BU)

REFERENCE MEAN: MT 0245 59.0 (N= 30)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 10003	THATCHER	57.0	30	-2.0	-5.7	.000
CI 13596	FORTUNA	60.2	30	1.2	4.4	.000
PI574642	MCNEAL	58.6	30	-.4	-1.4	.166
PI592761	ERNEST	59.6	30	.6	2.8	.010
PI607557	SCHOLAR	60.1	30	1.1	4.5	.000
ND 695	Reeder	59.9	30	.9	5.3	.000
BZ992588	Conan	59.4	30	.4	1.9	.071
BZ992322	HANK	57.7	30	-1.3	-6.0	.000
PI632252	OUTLOOK	58.2	30	-.8	-3.9	.001
PI633974	CHOTEAU	59.6	30	.6	3.2	.003
AGRIPRO1	NORPRO	58.8	30	-.2	-.8	.413
AGRIPRO2	KNUDSON	59.8	30	.8	4.2	.000

HEADING DATE (JULIAN DAYS; 176 = JUNE 25)

REFERENCE MEAN: MT 0245 176.7 (N= 30)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 10003	THATCHER	179.2	30	2.5	9.0	.000
CI 13596	FORTUNA	175.9	30	-.8	-3.4	.002
PI574642	MCNEAL	177.3	30	.6	2.7	.012
PI592761	ERNEST	176.3	30	-.4	-2.5	.018
PI607557	SCHOLAR	177.4	30	.7	4.6	.000
ND 695	Reeder	175.5	30	-1.2	-6.8	.000
BZ992588	Conan	175.3	30	-1.4	-6.7	.000
BZ992322	HANK	174.3	30	-2.4	-9.6	.000
PI632252	OUTLOOK	178.0	30	1.3	6.0	.000
PI633974	CHOTEAU	175.7	30	-1.0	-5.1	.000
AGRIPRO1	NORPRO	176.0	30	-.7	-3.6	.001
AGRIPRO2	KNUDSON	176.7	30	.0	.0	.973

## PLANT HEIGHT (INCHES)

REFERENCE MEAN: MT 0245 33.1 (N= 30)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 10003	THATCHER	40.7	30	7.6	13.7	.000
CI 13596	FORTUNA	37.9	30	4.8	10.7	.000
PI574642	MCNEAL	33.1	30	.0	-.0	.983
PI592761	ERNEST	37.6	30	4.5	12.0	.000
PI607557	SCHOLAR	36.5	30	3.4	7.9	.000
ND 695	Reeder	34.1	30	1.0	3.3	.002
BZ992588	Conan	30.8	30	-2.3	-8.5	.000
BZ992322	HANK	30.8	30	-2.3	-6.8	.000
PI632252	OUTLOOK	33.1	30	.0	.1	.924
PI633974	CHOTEAU	31.2	30	-1.9	-6.7	.000
AGRIPRO1	NORPRO	30.5	30	-2.6	-8.1	.000
AGRIPRO2	KNUDSON	32.3	30	-.8	-2.4	.022

## GRAIN PROTEIN (%)

REFERENCE MEAN: MT 0245 14.7 (N= 30)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 10003	THATCHER	15.4	30	.7	3.2	.003
CI 13596	FORTUNA	14.8	30	.2	1.1	.296
PI574642	MCNEAL	14.9	30	.2	1.2	.235
PI592761	ERNEST	15.4	30	.8	4.6	.000
PI607557	SCHOLAR	15.5	30	.9	4.1	.000
ND 695	Reeder	15.0	30	.3	1.9	.064
BZ992588	Conan	15.0	30	.4	3.3	.003
BZ992322	HANK	14.9	30	.3	1.5	.144
PI632252	OUTLOOK	14.6	30	-.1	-.4	.713
PI633974	CHOTEAU	14.9	30	.2	1.4	.164
AGRIPRO1	NORPRO	14.5	30	-.2	-1.0	.316
AGRIPRO2	KNUDSON	14.7	30	.0	.2	.872

Table 2.

2003-2005 STEM SOLID RATINGS (5=HOLLOW, 25=VERY SOLID) FROM THE  
ADVANCED SPRING WHEAT NURSERY GROWN AT BOZEMAN

	2003		2004		2005	
PEDIGREE	DRY	IRR	DRY	IRR	DRY	IRR
MCNEAL	6.5	6.4	6.8	5.7	7.3	6.1
THATCHER	9.8	6.5	7.4	5.4	9.8	8.9
FORTUNA	19.8	18.3	19.7	18.6	18.5	13.3
ERNEST	16.3	17.2	18.3	12.2	18.8	11.4
SCHOLAR	14.9	13.6	12.8	13.0	16.4	9.4
Conan	13.5	9.5	10.6	8.6	9.0	7.5
Reeder	6.6	6.9	6.8	5.1	6.9	5.3
OUTLOOK	8.3	7.3	7.0	5.7	7.3	6.6
CHOTEAU	23.9	21.7	20.8	21.9	18.5	19.7
HANK	9.0	7.5	8.2	6.9	8.4	7.5
MT0245	13.0	12.1	11.1	8.1	16.1	9.4

2003-2005 SAWFLY DAMAGE RATINGS FROM SOME OFFSTATION SPRING WHEAT NURSERIES  
GROWN IN NORTH-CENTRAL MONTANA

VARIETY	2003 LORING (% STEMS CUT)	2003 TURNER (% STEMS CUT)	2004 TURNER (% STEMS CUT)	2004 LORING (% STEMS CUT)	2005 TURNER (% STEMS CUT)	2005 LORING (% STEMS CUT)	2005 No. of Hav G
MCNEAL	60.0	15.0	43.3	63.3	16.67	88.3	71.7
FORTUNA	13.3	3.7	11.7	20.0	5.0	30.0	21.7
ERNEST	16.7	6.7	20.0	45.0	5.0	40.0	28.3
SCHOLAR	33.3	15.0	36.7	78.3	10.0	40.0	61.7
Conan	30.0	2.3	15.0	16.7	5.0	35.0	26.7
Reeder	26.7	15.0	28.3	68.3	5.0	33.3	65.0
OUTLOOK	35.0	6.7	31.7	66.7	8.3	38.3	63.3
CHOTEAU	10.0	3.7	15.0	28.3	5.0	26.7	8.3
HANK	25.0	20.0	36.7	86.7	6.7	31.7	60.0
MT 0245			18.3	20	0	33.3	28.3

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY  
Wheat (*Triticum* spp.)

NAME OF APPLICANT (S) Montana Agricultural Experiment Station	TEMPORARY OR EXPERIMENTAL DESIGNATION MT0245	VARIETY NAME Vida
ADDRESS (Street and No. or RD No., City, State, Zip Code and Country) 202 Linfield Hall Montana State University Bozeman, MT 59717		FOR OFFICIAL USE ONLY PVPO NUMBER 200600225

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.    or   ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: \_\_\_\_\_ Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

- 1 = Common  
2 = Durum  
3 = Club  
4 = Other (Specify) \_\_\_\_\_

2. VERNALIZATION:

- 1 = Spring  
2 = Winter  
3 = Other (Specify) \_\_\_\_\_

3. COLEOPTILE ANTHOCYANIN:

- 1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

- 1 = Prostrate 2 = Semi-Erect 3 = Erect

5. PLANT COLOR: (boot stage)

- 1 = Yellow-Green  
2 = Green  
3 = Blue-Green

6. FLAG LEAF: (boot stage)

- 1 = Erect 2 = Recurved  
 1 = Not Twisted 2 = Twisted  
 1 = Wax Absent 2 = Wax Present

7. EAR EMERGENCE:

- Number of Days (Average)  
 Number of Days Earlier Than \* Outlook  
Same As \* McNeal  
 Number of Days Later Than \* Fortuna  
\*Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

8. ANTER COLOR:

- 1 = Yellow 2 = Purple



## 9. PLANT HEIGHT: (from soil to top of head, excluding awns)

cm (Average)

cm Taller Than

Choteau

Same As

McNeal

cm Shorter Than

Reeder

## 10. STEM:

## A. ANTHOCYANIN

1 = Absent

2 = Present

## B. WAXY BLOOM

1 = Absent

2 = Present

## C. HAIRINESS (last internode of rachis)

1 = Absent

2 = Present

## D. INTERNODE

1 = Hollow

2 = Semi-Solid

3 = Solid

Number of Nodes

## E. PEDUNCLE

1 = Erect

2 = Recurved

3 = Semi-Erect

cm Length

## F. AURICLE

Anthocyanin:

1 = Absent

2 = Present

Hair:

1 = Absent

2 = Present

## 11. HEAD: (At Maturity)

## A. DENSITY

1 = Lax

2 = Middense (Laxdense)

3 = Dense

## B. SHAPE

1 = Tapering

2 = Strap

3 = Clavate

4 = Other (Specify) \_\_\_\_\_

## C. CURVATURE

1 = Erect

2 = Inclined

3 = Recurved

## D. AWNEDNESS

1 = Awnless

2 = Apically Awnletted

3 = Awnletted

4 = Awned

## 12. GLUMES: (At Maturity)

## A. COLOR

1 = White

2 = Tan

3 = Other (Specify) \_\_\_\_\_

## B. SHOULDER

1 = Wanting

2 = Oblique

3 = Rounded

4 = Square

5 = Elevated

6 = Apiculate

7 = Other (Specify) \_\_\_\_\_

## C. SHOULDER WIDTH

1 = Narrow

2 = Medium

3 = Wide

## D. BEAK

1 = Obtuse

2 = Acute

3 = Acuminate

## E. BEAK WIDTH

1 = Narrow

2 = Medium

3 = Wide

## F. GLUME LENGTH

1 = Short (ca. 7 mm)

2 = Medium (ca. 8 mm)

3 = Long (ca. 9 mm)

## G. WIDTH

1 = Narrow (ca. 3 mm)

2 = Medium (ca. 3.5 mm)

3 = Wide (ca. 4 mm)

## H. PUBESCENCE

1 = Not Present

2 = Present

## 13. SEED:

## A. SHAPE

- ☐ 1 = 1 = Ovate  
☐ 2 = 2 = Oval  
☐ 3 = 3 = Elliptical

## B. CHEEK

- ☐ 1 = 1 = Rounded  
☐ 2 = 2 = Angular

## C. BRUSH

- ☐ 2 = 1 = Short  
☐ 2 = 2 = Medium  
☐ 3 = 3 = Long

## D. CREASE

- ☐ 2 = 1 = Width 60% or less of Kernel  
☐ 2 = 2 = Width 80% or less of Kernel  
☐ 3 = 3 = Width Nearly as Wide as Kernel

- ☐ 2 = 1 = Depth 20% or less of Kernel  
☐ 2 = 2 = Depth 35% or less of Kernel  
☐ 3 = 3 = Depth 50% or less of Kernel

## E. COLOR

- ☐ 3 = 1 = White  
☐ 2 = 2 = Amber  
☐ 3 = 3 = Red  
☐ 4 = 4 = Other (Specify) \_\_\_\_\_

## F. TEXTURE

- ☐ 1 = 1 = Hard  
☐ 2 = 2 = Soft  
☐ 3 = 3 = Other (Specify) \_\_\_\_\_

## G. PHENOL REACTION (See Instructions)

- ☐ 1 = 1 = Ivory  
☐ 2 = 2 = Fawn  
☐ 3 = 3 = Light Brown  
☐ 4 = 4 = Dark Brown  
☐ 5 = 5 = Black

## H. SEED WEIGHT

- ☐ 3 ☐ 2 = g/1000 Seed (whole number only)

## I. GERM SIZE

- ☐ 2 = 1 = Small  
☐ 2 = 2 = Midsize  
☐ 3 = 3 = Large

## 14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

(0 = Not Tested    1 = Susceptible    2 = Resistant    3 = Intermediate    4 = Tolerant)

- |   |   |
|---|---|
| <input type="checkbox"/> 3 = Stem Rust ( <i>Puccinia graminis</i> f. sp. <i>tritici</i> ) | <input type="checkbox"/> 0 = Leaf Rust ( <i>Puccinia recondita</i> f. sp. <i>tritici</i> )                      |
| <input type="checkbox"/> 3 = Stripe Rust ( <i>Puccinia striiformis</i> )                  | <input type="checkbox"/> 0 = Loose Smut ( <i>Ustilago tritici</i> )   |
| <input type="checkbox"/> 3 = Tan Spot ( <i>Pyrenophora tritici-repentis</i> )             | <input type="checkbox"/> 0 = Flag Smut ( <i>Urocystis agropyri</i> )  |
| <input type="checkbox"/> 0 = Halo Spot ( <i>Selenophoma donacis</i> )                     | <input type="checkbox"/> 0 = Common Bunt ( <i>Tilletia tritici</i> or <i>T. laevis</i> )                        |
| <input type="checkbox"/> 3 = Septoria nodorum (Glume Blotch)                              | <input type="checkbox"/> 0 = Dwarf Bunt ( <i>Tilletia controversa</i> )   |
| <input type="checkbox"/> 0 = Septoria avenae (Speckled Leaf Disease)                      | <input type="checkbox"/> 0 = Karnal Bunt ( <i>Tilletia indica</i> )   |
| <input type="checkbox"/> 0 = Septoria tritici (Speckled Leaf Blotch)                      | <input type="checkbox"/> 0 = Powdery Mildew ( <i>Erysiphe graminis</i> f. sp. <i>tritici</i> )                  |
| <input type="checkbox"/> 1 = Scab ( <i>Fusarium</i> spp.)                                 | <input type="checkbox"/> 0 = "Snow Molds"   |
| <input type="checkbox"/> 0 = "Black Point" (Kernel Smudge)                                | <input type="checkbox"/> 0 = Common Root Rot ( <i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.) |
| <input type="checkbox"/> 0 = Barley Yellow Dwarf Virus (BYDV)                             | <input type="checkbox"/> 0 = Rhizoctonia Root Rot ( <i>Rhizoctonia solani</i> )                                 |
| <input type="checkbox"/> 0 = Soilborne Mosaic Virus (SBMV)                                | <input type="checkbox"/> 0 = Black Chaff ( <i>Xanthomonas campestris</i> pv. <i>translucens</i> )               |
| <input type="checkbox"/> 0 = Wheat Yellow (Spindle Streak) Mosaic Virus                   | <input type="checkbox"/> 0 = Bacterial Leaf Blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )          |
| <input type="checkbox"/> 0 = Wheat Streak Mosaic Virus (WSMV)                             | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____  | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____  | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____  | <input type="checkbox"/> Other (Specify) _____  |

## 15. INSECT: (0 = Not Tested    1 = Susceptible    2 = Resistant    3 = Intermediate    4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

- |  |  |
|--|--|
| <input type="checkbox"/> 0 = Hessian Fly ( <i>Mayetiola destructor</i> )   | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 3 = Stem Sawfly ( <i>Cephus</i> spp.)             | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 0 = Cereal Leaf Beetle ( <i>Oulema melanopa</i> ) | <input type="checkbox"/> Other (Specify) _____ |

15. INSECT: (continued) (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (Where Needed)

- ☒ 1 Russian Aphid (*Diuraphis noxia*)  
☐ 0 Greenbug (*Schizaphis graminum*)  
☐ 0 Aphids

- ☐ Other (Specify) \_\_\_\_\_  
☐ Other (Specify) \_\_\_\_\_  
☐ Other (Specify) \_\_\_\_\_

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

19D. Additional Information

Table 3.

2003-2004 MILLING AND BAKING QUALITY SUMMARY FOR MT 0245 COMPARED TO SELECTED SPRING WHEATS IN THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA ( 8 LOCATION MEANS)

VARIETY	GRAIN PROTEIN (%)	FLOUR PROTEIN (%)	FLOUR YIELD (%)	FLOUR ASH (%)	MIXOGRAPH TOLERANCE	MIXOGRAPH MIXTIME (MIN.)	MIXOGRAPH WATER ABS. (%)	BAKE MIX TIME (MIN.)	BAKE WATER (%)	LOAF VOLUME (CC.)	GRUMB GRAIN SCORE
MT 0245	16.4	13.6	68.5	0.42	3.9	3.2	63.7	4.9	73.4	1171.4	3.3
THATCHER	17.6	14.4	63.8	0.45	5.3	4.2	65.9	7.9	76.4	1249.9	3.8
FORTUNA	16.5	13.8	68.3	0.45	3.6	3.1	63.1	4.5	72.6	1153.1	3.6
MCNEAL	16.6	13.9	64.1	0.44	6.1	6.8	63.9	11.8	77.0	1235.8	3.1
ERNEST	17.2	14.4	67.6	0.42	5.1	3.9	64.3	9.0	74.4	1227.6	3.8
SCHOLAR	17.5	14.7	68.0	0.45	4.5	3.2	64.4	4.5	73.2	1179.4	2.9
Reeder	16.5	13.9	65.9	0.39	3.8	3.1	63.6	4.2	72.9	1111.9	2.8
Conan	16.5	13.4	65.1	0.43	5.0	4.9	62.6	8.2	73.6	1198.5	3.9
HANK	16.7	13.8	66.8	0.42	4.8	5.6	63.3	8.6	73.4	1200.0	3.6
OUTLOOK	16.0	13.4	66.5	0.44	5.1	4.0	62.7	5.8	72.5	1145.1	3.3
CHOTEAU	16.5	13.9	65.8	0.40	4.6	3.2	63.7	5.3	73.1	1153.0	3.4
NORPRO	16.3	13.4	63.0	0.46	5.0	3.8	64.6	6.4	74.8	1152.4	3.4
KNUDSON	16.6	14.0	66.5	0.45	6.5	7.2	67.1	17.7	79.8	1148.8	3.3
NURSERY AVERAGE	16.6	13.9	66.2	0.44	4.9	4.3	64.0	7.5	74.3	1177.0	3.4

200600225

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S) Montana Agricultural Experiment Station	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER MT 0245	3. VARIETY NAME Vida
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 202 Linfield Hall Montana State University Bozeman MT 59717	5. TELEPHONE (Include area code) 406 994 3683	6. FAX (Include area code) 406 994 6579
	7. PVPO NUMBER 200600225	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☒ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

The owner is a state agricultural experiment station.

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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